

WHAT IS CLAIMED IS:

1. A gas compressor comprising:

a compressor main body which sucks, compresses, and discharges refrigerant gas, and an oil sump which stores oil for lubricating the compressor main body, the compressor main body being composed of a cylinder, side blocks arranged at axial ends of the cylinder, a rotor rotatably arranged in the cylinder, vane grooves formed so as to extend from an outer peripheral surface of the rotor to an inner periphery thereof, and vanes accommodated in the vane grooves so as to be capable of advancing and retracting;

a back pressure space including bottom portions of the vane grooves and attaining a middle pressure between a suction pressure and a discharge pressure during normal operation of the compressor main body;

a first high pressure oil passage establishing communication between the oil sump and the vane groove bottom portions when the vanes are at their discharge stroke positions;

a second high pressure oil passage establishing communication between the oil sump and the back pressure space; and

an opening/closing valve for opening and closing the second high pressure oil passage.

2. A gas compressor according to Claim 1, wherein the opening/closing valve keeps the second high pressure oil passage open when the rotation of the compressor main body is at rest, closes

the second high pressure oil passage when the compressor main body starts rotation, and keeps the second high pressure oil passage closed during normal operation of the compressor main body.

3. A gas compressor according to Claim 1, wherein the opening/closing valve keeps the second high pressure oil passage closed during normal operation of the compressor main body and keeps it open when the compressor main body is not performing normal operation and the oil pressure is low.

4. A gas compressor according to Claim 1, wherein the back pressure space has a flat groove communicating with the vane groove bottom portions when the vanes are at their positions in transition from suction to compression stroke, and that the vane groove bottom portions communicate with the first high pressure oil passage after the communication between the flat groove and the vane groove bottom portions is interrupted.

5. A gas compressor according to Claim 1, wherein a downstream end portion of the second high pressure oil passage opens into the vane groove bottom portions, with the vanes being situated at their discharge stroke positions.

6. A gas compressor according to Claim 4, wherein the downstream end portion of the second high pressure oil passage opens into the flat groove.

7. A gas compressor according to Claim 1, wherein the opening/closing valve is movably arranged so as to open and close

the second high pressure oil passage and has a valve element situated at a position where the valve element closes the flow passage and an elastic member capable of imparting an elastic force to the valve element to place the valve element at a position where the valve element opens the passage, the valve element moving under a pressure of high pressure oil to a position where the valve element closes the flow passage during normal operation of the compressor and moving to a position where the valve element opens the flow passage by the elastic force of the elastic member with the pressure of the high pressure oil being lowered.

8. A gas compressor according to Claim 7, wherein a differential pressure of the high pressure oil to which the discharge pressure in the compressor is imparted and a middle pressure oil is applied to the valve element.